compressed snow. It can be compressed into square blocks suitable for conveyance and packing by any simple contrivance, and will keep as well as ice, without more than ordinary precaution.

H. W. Bleyer.

Buffalo, Feb. 9, 1865.

A Steam Carriage of the Olden Time.

Messrs. Editors:—It has occurred to me that a description of a steam carriage which I saw some thirty years ago might be interesting to many of your readers, inasmuch as nothing has ever been publicly mentioned, to my knowledge, concerning it.

This carriage was made by a machinist in Brattleboro, Vt., and successfully worked as an experiment on the roads in that vicinity. It very nearly resembled a common one-horse wagon. The boiler was made of a series of $1\frac{1}{4}$ or $1\frac{1}{2}$-inch tubes, bent in the form of an ox bow, or U-form, and so arranged that one branch served as the grate bars and the other branch as the roof of the fire place. The ends of the tubes terminated in two cylinders of from four to six inches diameter; the upper one being surmounted by another cylinder of larger capacity for a steam chamber. Two piston cylinders—3-inch pistons—worked harmoniously under the bottom of the carriage. These, by means of a short crank shaft, with a crank at each end and a chain wheel between, communicated motion and power to the hind axle by a chain belt and a longer chain wheel on the hind axle.

F. G. W.

Worcester, Mass., Jan. 25, 1865.

The Names of the French Weights and Measures.

Messrs. Editors:—In your interesting and valuable paper of the 28th ult. I read an article on the "Metric System." As I am an admirer of that excellent system I do not wish to see the terms which designate the French measure altered in such a way that they will sound as unmusical and gutteral as the Red man's tongue. By all means let us have the pure French names. Scholars, engineers, the people—all, will learn the true pronunciation, and, in the end, be more satisfied. I have ventured to call your attention and the attention of persons interested in a new system to the manifest error above named.

Although I am not a subscriber on your books yet I cannot do without your paper, and anxiously look for the succeeding number, wishing the while they came oftener.

Chas. Fred. Thomas, Jr.,
Engineer U. S. Senate.

Washington, D. C., July 29, 1865.

Aquaria Cement.

Messrs. Editors:—Your correspondent wants a good cement for an aquarium. The following I have used five or six years:—

One part, by measure, of litharge; one part plaster of Paris; one part fine beach sand; one-third part fine powdered rosin; mix all together. This may be kept for years, while dry, in a well-corked bottle; when used, make in a putty with boiled linseed oil; a little patent dryer may be used; it will stand water at once, either salt or fresh.

A cheap aquarium is made as follows:—

Cut a narrow groove in a board the size you wish; set four pieces of glass on edge in the grooves; put a piece of zinc in the bottom; on the board make a light frame, the size of the top, with grooves; pass a small rod through the frame down the inside of the corners, through the bottom, and screw up tight; put the cement in all the corners, and you will have an aquarium at very trifling cost.

N. Hallock.

Queens, L. I., Feb. 6, 1865.

Effect of the Earth's Cooling.

Messrs. Editors:—The statement made in the subjoined article has created some little talk among certain circles in this vicinity, and there seems to be quite a diversity of opinion as to the Doctor's conclusions, among the most reasonable is this, that contracting the circumference of the earth would not shorten the time of revolutions on its axis; for two bodies of equal weight but of different dimensions, if removed from external friction, will revolve with equal force and velocity, as is proved by the falling of a feather in a vacuum; and as this mundane sphere is floating in ether which exerts no friction upon it, there would be no difference in its time of revolution if it were contracted to one-half or expanded to double its present size. Another says that the momentum of the earth's revolution would continue the same if its diameter were shortened, and hence its rotary motion must increase in the ratio of its concentration. You may see the practical effect of this law by the winding up of a revolving weight around your hand—like a sling. You may see the speed (of revolution) increase as the string shortens.

Now, as we do not presume to be philosophers enough to determine the actual fact, we beg to ask your decision, as you are conversant with these matters, either by letter or through the columns of your able journal.

W. E. P.

Boston, Mass., Jan. 30, 1865.

"We find in Ayer's American Almanac the remarkable statement that the temperature of the earth has not diminished more than 1-306th part of one degree Fahrenheit for 2,000 years. To our inquiry how he could make such an assertion, Dr. Ayer writes us the following answer:—'Hipparchus gives the exact record of an eclipse in his time. This enables us to measure with extreme accuracy the earth's diurnal revolutions since to any eclipse now. Diminution of its heat would by concentration shorten its axis, and consequently its time of revolution on its axis. The data show that this change has been only such as I state it, mathematically and indisputably true.'"

[The problem is very simple, and the position of the second gentleman is manifestly correct. If a revolving sphere contract in size, the matter at the surface will tend to preserve its velocity, and this will cause a greater number of revolutions in a given time.—Eds.

Melting Platinum.

Messrs. Editors:—Will you be kind enough to inform me whether any method has been found out to melt platinum. I have understood from one or two gentlemen from New York that it has been done with success, but they were unable to give me the modus operandi. Platinum exists in Peru in more or less quantities, and I am very anxious to know the new method of treating the ore, as it must be vastly cheaper than the old one, with nitric and muriatic acids?

Gerrit S. Backus,
Civil Engineer.

Lima, Peru, S. A.

[Platinum can be melted by the compound blowpipe. If it is to be melted in large quantities it should be first heated white hot, together with a fire brick on which it is to be melted.

Prof. Mapes tells a good story of his journey to see it done. One day he called on Dr. Chilton and asked the Doctor if he had seen the account of a man in Philadelphia melting large quantities of platinum. The Doctor said he had.

"Well," says Prof. Mapes, "take your carpet bag and let us go on and see how it is done."

They arrived in Philadelphia, and calling upon the man, who was a watchmaker, asked him if he would show them how he melted platinum in such large masses. The man answered very politely that he would. Then putting a fire-brick into his muffle, he invited the gentlemen to take seats for a few minutes. When the brick was white hot he took it out, placed his platinum upon it, and directing the blaze of his blow-pipe upon the metal, soon saw it glisten and run.

As the gentlemen came out of the shop Prof. Mapes remarked to Dr. Chilton:

"I say, Doctor, did you ever see two bigger fools than we are, to travel ninety miles to see a man heat a brick?"

Platinum is so very refractory that when melted on a brick that is white hot it will chill and harden before it runs off the brick.—Eds.

The Track of an Army.

The track of an army is generally marked by desolation and suffering, and the evil effects attending the passage of armed men through a hostile country has been made the theme of more than one ambitious essay.

As our armies retake territory unlawfully held by the insurgents striking proofs of the intelligence and animating spirit of the individual soldiers of our armies is manifested. We are frequently in receipt of letters like the one subjoined:—

Messrs. Munn & Co.:—I have the honor to acknowledge the receipt of your communication, by which I learn that a patent has been granted to me on my rotary steam engine. I am indebted to your skill for the promptness with which you have proceeded in my case. I can heartily recommend your Agency and your paber to all my friends, or those who have any interest in the Patent Office or in the promotion of the useful arts. Very respectfully,

John R. Ellis,
Private, Co. F, 22d Wis. Vols., 2nd Brigade, 3d Division, 20 A. C.

Hardenville, S. C., Jan. 23, 1865.

To Color Scarlet.

A correspondent of the *Prairie Farmer* thus speaks of her method of dyeing scarlet. Similar recipes have been frequently published in the Scientific American, but there are, doubtless, new readers who will be glad to learn the process:—

"Take one oz. cochineal, two oz. solution of tin, one half oz. cream of tartar. Take soft water enough to cover the goods, and make it boil, then add the cochineal. In five minutes after put in the solution to tin, and in five minntes more put in the cream tartar; then in five minutes more put in the goods, and boil till the water is clear. This is intended for one pound of yarn. Tin or brass kettle should be used.

"For coloring green, I put 2oz. indigo into 4oz. oil vitriol (sulphuric acid), about two weeks before I want to color; shake well every day. When ready for coloring, I make a strong decoction of black oak bark sufficient to wet what I design to color; to this add one pound of alum to every eight pounds of yarn, stirring until all the alum is dissolved. Then pour in the mixture of indigo till I think I have it of the shade desired. Then put in the yarn as much at once as I can—let it be over the fire 25 or 30 minutes; then lift it out to air a few minutes—return it to the kettle and let it simmer three hours, stirring it frequently. I think two ounces of indigo will color 10 pounds of yarn deep green and five pounds pale green. The pale green is managed in the same way, only use a less quantity of indigo."

Facts concerning Shells.

The Pittsburgh *Commercial* says:—

"The shell department attached to the Fort Pitt foundery contains many curious and interesting things. The core of each shell is baked and varnished in the same manner as the molds for casting the guns. One good molder, with a helper, will cast from thirty to forty per diem of the 8-inch shells, and the establishment is capable of turning out on an emergency five hundred shells per diem. At present, however, they are only making about one hundred per day. Fifty tons of iron per week are used up in this department alone. Each shell, after being cast, is ground on an emery wheel, polished and hammered until it is perfectly round and smooth, qualities determined by gages, which are made with such nicety as to detect an inequality of the four-hundredth part of an inch on the surface. The interior of the shell is also gaged to determine its thickness, which must be of an exact regulation—as, for instance, one-and a-half inches in thickness for an 8-inch shell and two inches for a 10-inch. For these shells, when finished, Government pays but $6\frac{1}{2}$ cents per pound, which is $3\frac{1}{2}$ cents per pound less than is paid for a finished columbiad.

SPECIAL NOTICE.

W. O. Hickok, of Harrisburg, Pa., has petitioned for the extension of a patent granted to him on the 17th day of June, 1851, for an improvement in regulators for the pen beam in ruling machines.

Parties wishing to oppose the above extension must appear and show cause on the 29th day of May next, at 12 o'clock, M., when the petition will be heard.

From all quarters comes the intelligence that the present season's ice crop will be a very large and fine one. The present state of the labor market favors the securing of an unusual quantity.

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Improved Coffee Roaster.

A cup of pure unadulterated coffee, made from berries properly roasted, is one of the most indispensable adjuncts of the breakfast table So far from being unhealthy, it is extremely wholesome, when taken in moderate quantities. It is both inspiring and stimulating, and has the additional merit of never being followed by the reaction or lassitude which characterizes alcoholic liquors or the wish-wash beverages of rye, etc., appropriately termed "war coffee." Much of the coffee ordinarily sold ready-roasted, has been improperly prepared, having been burned in the process, so that a bitter taste and bad color are imparted. Where this is not the case, the life or flavor of the coffee, which is contained in the essential oil of the berry, is driven off with the gases arising from the fire, so that while the appearance is uninjured the flavor is almost lost. It is claimed for the apparatus here illustrated that all these deleterious effects are avoided. That the coffee is roasted evenly throughout, that none of it is burned, and that the aroma is fully preserved. None of the gas arising from the furnace reaches the coffee, so that this injurious exposure, which is common to many coffee roasters, never occurs. The appended description will render the operation and construction of the machine intelligible to our readers (see Figs. 1 and 2). The canister, A, Fig. 1, which contains the coffee, is set in an oven or furnace, B, which is arched over; this furnace contains a metallic retort, C, around which the flames and heat from the furnace passes on its way to the chimney through the flues, D (see Fig. 2). In this retort the pipe, E, enters at top and bottom (Fig. 2). This is simply the plan of the apparatus. When the coffee is to be roasted it is put in the canister through the door, F. The outer doors are then closed, and the retort is heated to a dull red color, the canister, A, being put in motion meanwhile by a belt on the pulley, G. The retort is then full of the fumes and moisture driven off by the heat. To discharge these the damper, H, which has previously been closed is now opened, and the retort chamber freed. This fumigating process, so to speak, occupies about five minutes; at the end of this period, the aromatic flavor of the berry begins to evolve, and the damper, H, is closed. "The hot air of the retort," says the inventor, "carries the aroma up through the pipe, E, where it is cooled, so soon as it reaches the air, and falls into the retort, only to again circulate through the coffee, as it rotates, thus a complete circulation of the coffee in its own heated atmosphere is obtained which results in a superior article." The coffee is then removed by taking out the canister, as usual. We have seen samples of coffee roasted in this manner taken at random from the mass, which were evenly browned and free from burnt particles.

Fig. 1

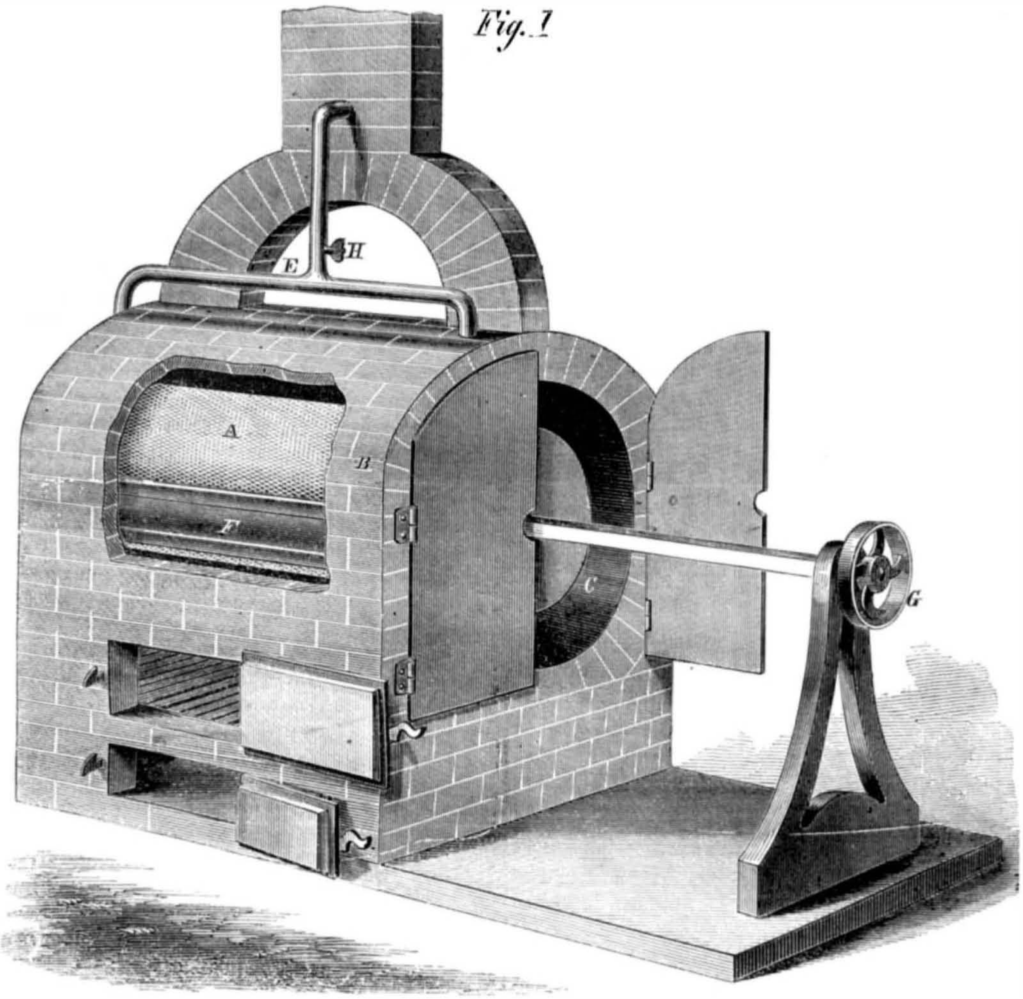
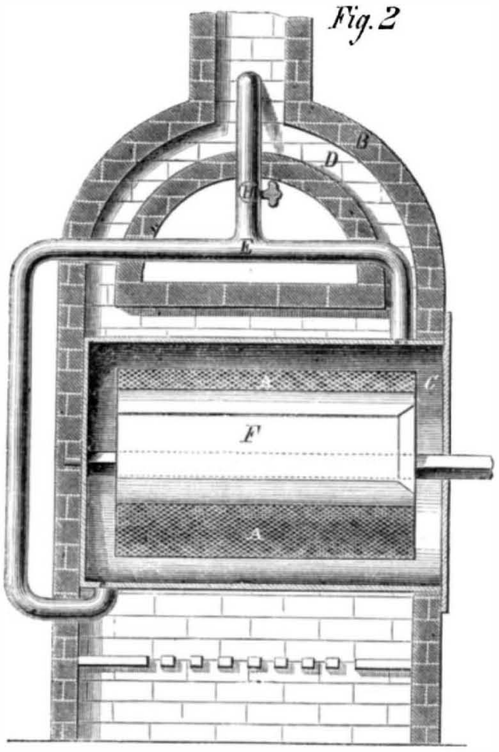


Fig. 2



RICHARDS'S COFFEE ROASTER.

A great saving of time is claimed for this roaster, as it is said a charge can be thoroughly done in ten minutes, while the ordinary time is twenty or forty minutes. The canister is also preserved from being rapidly burnt out, since the fire does not reach it. A great saving of fuel is also claimed from the even distribution of the heat and its thorough circulation, while shielding the coffee from the coal-gas is of great importance. This roaster was patented on the 8th of October, 1861, by Henry E. Richards, of Bloomfield, N. J. [See advertisement in another column.]

THE WAY TO RAISE BLACKBERRIES.

At the last meeting of the Farmers' Club, Dr. Ward described his plan of cultivating and training blackberries, and as it is a manifest improvement over the common method, we present a condensed report of his remarks.

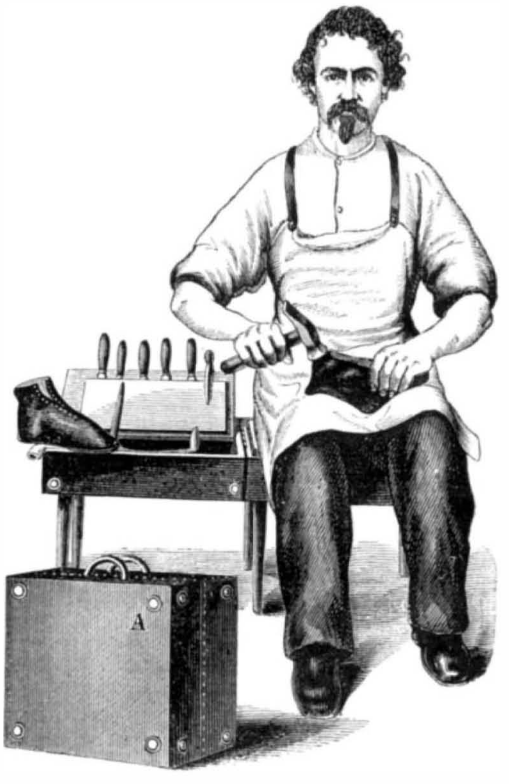
The vines are planted in rows three feet apart, and three feet apart in the rows. Over each row is stretched a stout wire at the hight of about four feet, with stakes at proper intervals to support it at this hight. As the vines grow they are tied to the wire, and bent down along the wire all in the same direction—that is, all toward the south, all toward the north, or in such direction as may be most convenient.

The berries are borne on the wood of the previous year's growth. In the Spring of each year, the bearing wood of the year before is cut out and removed, and the new shoots are tied to the wire, the lateral shoots of the new wood being at the same time cut back within a foot of the main stalk. Thus the whole labor of trimming and training the vines is performed at one operation. It is better to manure in the Fall, and this all-important matter should be attended to every year.

HOLDEN'S SHOEMAKER'S VALISE.

This novel invention consists in combining a seat or work-bench, with a valise, so that the former may be folded up in the shape of the latter and used as a receptacle for garments, as well as a work-bench. The seat is not supported by the framing of the valise but by the legs, as shown, so that no part is unduly strained. These legs unscrew, and the whole, when folded, occupies no more space than an ordinary traveling valise. The nails, A, in the head of the one shown folded, come out when the legs are to be inserted, so that there is no external sign of the purposes for which it is intended.

All the tools necessary for a shoemaker can be carried in it, and it is useful for other mechanics as well as those of the class for whom it is shown as adapted in the engraving. For the disciples of St. Crispin, who follow the army, or for those itinerant shoemakers who go from house to house in the country, performing work for persons far from towns, this will be found a most useful article. Patented through the Scientific American Patent Agency, by S. B. and L. L. Holden, Jan. 31, 1865; for further information address Luther L. Holden, *Herald* office, Boston, Mass.



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